IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A maskless lithography system for transferring a pattern onto the surface of a target, comprising:

• at least one beam generator for generating a plurality of beamlets;

• a modulation means comprising a plurality of modulators for modulating the magnitude of a beamlet and

• a control unit for controlling each of the modulators, wherein the control unit generates and delivers pattern data to said modulation means for controlling the magnitude of each individual beamlet, the control unit comprising:

- at least one data storage for storing the pattern data;

- at least one readout unit for reading out the pattern data from the data storage; at least one data converter for converting the pattern data read out from the data storage into at least one modulated light beam;

- at least one optical transmitter for transmitting said at least one modulated light beam to said modulation means.

2. (Original) The maskless lithography system according to claim 1, wherein each modulator of the modulation means comprises a light sensitive element for converting said at least one modulated light beam coming from said control unit into a signal for actuating said modulator.

3. (Currently Amended) The maskless lithography system according to claim ~~1 or 2~~, wherein said optical transmitter comprise at least one optical fiber having a modulation means end and a control unit end, for transmitting said at least one modulated light beam from said control unit to said modulation means.

4. (Currently Amended) The maskless lithography system according to claim 1 ~~or claim 2~~, furthermore comprising at least one projector for projecting said at least one modulated light beam on said modulation mean.

5. (Original) The maskless lithography system according to claim 3, wherein said at least one optical fibers at their modulation means end are coupled to one or more optical fiber arrays.

6. (Original) The maskless lithography system according to claim 5, wherein substantially each optical fiber from said one or more optical fiber arrays is coupled to one of said light sensitive converter elements

7. (Original) The maskless lithography system according to claim 3, wherein said at least one optical fiber at its modulation means end is coupled to one or more optical waveguides, and said optical waveguides being coupled to the light sensitive elements.

8. (Previously Presented) The maskless lithography system according claim 1, wherein said optical transmitter comprise at least one multiplexer at its control unit end and at least one demultiplexer at its modulation means end.

9. (Previously Presented) The maskless lithography system according to claim 1, having an optical path parallel to which said plurality of beamlets are traveling, wherein said optical transmitter is furthermore provided with at least one optical coupler for coupling said at least one modulated light beam into said optical path.

10. (Previously Presented) The maskless lithography system according to claim 1, wherein the data converter and the optical transmitter are adapted for generating at least one modulated light beam having at least one wavelength between 200 and 1700 nm.

11. (Previously Presented) The maskless lithography system according to claim 3, wherein the light sensitive elements are provided with a filter selected form the group of a selection filter which is transparent for a predetermined wavelength range, a selection filter for transmitting light having a predetermined direction of polarization, a prism for limiting the sensitivity of said light sensitive element to light entering said prism from a predetermined direction, and a grating for limiting the sensitivity of said light sensitive element to light entering said grating from a predetermined direction.

12. (Previously Presented) The maskless lithography system according to claim 2, wherein said light sensitive element comprises at least one photodiode.

13. (Original) The maskless lithography system according to claim 12, wherein said photodiode comprises a MSM-photodiode, a PIN-photodiode or an avalanche photodiode

14. (Previously Presented) The maskless lithography system according to claim 1, wherein said modulators comprise electrostatic deflectors.

15. (Previously Presented) The maskless lithography system according to claim 1, wherein said data converter comprises a laser diode.

16. (Previously Presented) The maskless lithography system according to claim 1, wherein said optical transmitter comprises at least one optical fiber having a modulation means end and a control unit end, for transmitting said at least one modulated light beam from said control unit to said modulation means, and at least one projector for projecting said modulation means end of said optical fiber or optical fibers on said modulation mean.

17. (Previously Presented) The maskless lithography system according to claim 1, wherein said beam generator comprises an ion beam generating means.

18. (Previously Presented) The maskless lithography system according to claim 1, wherein said beam generator comprises a x-ray beam generating means.

19. (Previously Presented) The maskless lithography system according to claim 1, wherein said beam generator comprises an electron beam generating means.

20. (Previously Presented) The maskless lithography system according to claim 1, wherein each modulator of the modulation means comprising a light sensitive element for converting said at least one modulated light beam originating from said control unit into a signal for actuating said modulator, said modulation means having a beam generator side and a target side.

21. (Original) The maskless lithography system according to claim 20, wherein each of said modulators comprising at least one electrostatic deflector, and an aperture between said at least one electrostatic deflector and said target side, said electrostatic deflectors of said modulators defining an electrostatic deflector array and said apertures of said modulators defining an aperture array.

22. (Original) The maskless lithography system of claim 21, wherein each electrostatic deflector is operationally coupled to alight sensitive element.

23. (Currently Amended) The maskless lithography system according to claim 20~~claims 20-22~~. wherein said optical transmitter comprises at least one beam splitter for splitting said at least one modulated light beam into a plurality of modulated light beams.

24. (Currently Amended) The maskless lithography system of claim 20~~claims 20-22~~, wherein said optical transmitter comprises projectors for projecting said plurality of

modulated light beams on said light sensitive elements.

25. (Original) The maskless lithography system of claim 24, wherein said projectors are adapted for projecting at an angle between 0 and 88 degrees relative to a plane perpendicular to said electrostatic deflector array.

26. (Previously Presented) The maskless lithography system of claim 24, wherein the projector comprise at least one lens for projecting the plurality of modulated light beams on said electrostatic deflector aperture array.

27. (Original) The maskless lithography system according to claim 26, wherein the projector comprise a first demagnifier with a reduction optical system for demagnifying the plurality of modulated light beams and a projection optical system for projecting the demagnified plurality of modulated light beams on said electrostatic deflector aperture array.

28. (Original) The maskless lithography system according to claim 27, wherein said reduction optical system comprises a micro lens array, each micro lens of said micro lens array being aligned with one of said plurality of modulated light beams and adapted for reducing the size of said one of said modulated light beams.

29. (Previously Presented) The maskless lithography system according to claim 27, wherein said projection optical system further comprises a mirror, for reflecting the plurality of modulated, demagnified light beams coming from the reduction optical system in the direction of said lens of the projection optical system.

30. (Previously Presented) The maskless lithography system according to claim 20, wherein

the area on the modulation means not covered by the light sensitive elements is provided with a reflective layer.

31. (Previously Presented) The maskless lithography system according to claim 20, wherein a diffusive layer is provided on the surface of the modulation means facing the incoming plurality of modulated light beams.

32. (Previously Presented) The maskless lithography system according to claim 1, wherein said optical transmitter further comprises an optical wave guide for coupling each of the plurality of modulated light beams substantially parallel to the electrostatic deflector aperture array plane towards its corresponding light sensitive element.

33. (Original) The maskless lithography system according to claim 32, wherein said optical transmitter further comprises an optical micro lens array provided with a plurality of micro lenses, each micro lens being aligned with one of said plurality of modulated light beams for coupling its modulated light beam into a corresponding optical wave-guide.

34. (Previously Presented) The maskless lithography system according to claim 1, wherein said optical transmitter comprises a plurality of optical fibers, the data converter comprising means for coupling said at least one modulated light beam in said plurality of optical fibers, said plurality of optical fibers being grouped to form at least one fiber ribbon, said at least one fiber ribbon being attached at one of the sides of said electrostatic deflection array, and the light sensitive elements being adapted for electrically activating their corresponding electrostatic deflector via electrical interconnects.

35. (Previously Presented) The maskless lithography system according to claim 1, wherein said beam generating means comprise light beam generating means, preferably an electromagnetic beam having a wavelength smaller than 300 nm.

36. (Previously Presented) The maskless lithography system according to claim 1, wherein the modulation means comprises at least one spatial light modulator.

37. (Original) The maskless lithography system according to claim 36, wherein said spatial light modulator comprises a deformable mirror device, comprising an array of micro-mirrors.

38. (Original) The maskless lithography system according to claim 37, wherein each micro-mirror comprises a light sensitive element operationally coupled to said optical transmitter for receiving a modulated light beam.

39. (Previously Presented) A process for transferring a predefined pattern onto a substrate using a maskless lithography system comprising:
- generating a plurality of beamlets;
- modulating a magnitude of a beamlet using a plurality of modulators;
- controlling each of the modulators, wherein a control unit generates and delivers pattern data for controlling the magnitude of each individual beamlet;
- storing the pattern data;
- reading out the stored pattern data;
- converting the read out pattern data into at least one modulated light beam;
- transmitting said at least one modulated light beam.

40. (Original) A method for transferring a pattern onto the surface of a target using a lithography system comprising at least one beam generator for generating a plurality of beamlets and modulation means for individually controllably modulating substantially each beamlet, said method comprising:
- retrieving pattern data from a data storage;
- transforming said pattern data into at last one modulated light beam;

- optically coupling said at least one modulated light beam to said modulation means.

41. (Original) The method of claim 40, wherein said modulation means comprise an array of modulators, each provided with light sensitive elements, the method further comprising:
- directing said at least one modulated light beam onto said modulators;
- coupling each of said modulated light beams to one light sensitive element.